



# XHBN.HW-D-0644 - Joint Systems

## Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

## XHBN - Joint Systems

### XHBN7 - Joint Systems Certified for Canada

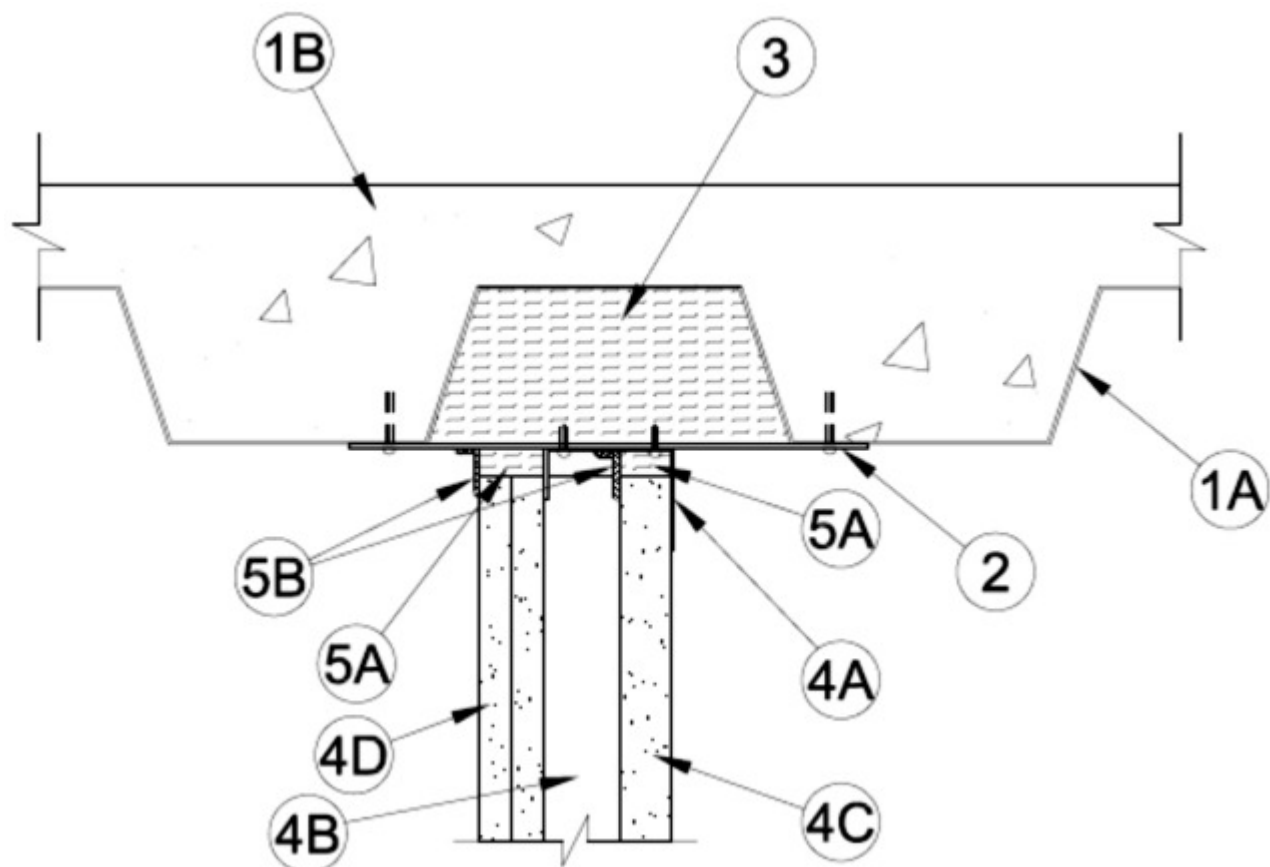
See General Information for Joint Systems

See General Information for Joint Systems Certified for Canada

### System No. HW-D-0644

June 16, 2017

ANSI/UL2079	CAN/ULC S115
Assembly Ratings — 1 and 2 Hr (See Items 1 and 4C)	F Ratings — 1 and 2 Hr (See Items 1 and 4C)
Nominal Joint Width - 3/4 or 1-1/2 In. (See Item 5).	FT Ratings — 1 and 2 Hr (See Items 1 and 4C)
Class II Movement Capabilities — 25, 50% or 100% Compression or Extension (See Item 5)	FH Ratings — 1 and 2 Hr (See Items 1 and 4C)
L Rating At Ambient — Less Than 1 CFM/Lin ft	FTH Ratings — 1 and 2 Hr (See Items 1 and 4C)
L Rating At 400 F — Less Than 1 CFM/Lin ft	Nominal Joint Width - 19 mm or 38 mm (See Item 5).
	Class II Movement Capabilities — 25, 50% or 100% Compression or Extension (See Item 5)
	L Rating At Ambient — Less Than 1.55 L/s/m
	L Rating At 400 F — Less Than 1.55 L/s/m



**1. Floor Assembly** — The fire-rated fluted steel floor unit/concrete floor assembly shall be constructed of the materials and in the manner described in the individual Floor-Ceiling Design in the Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor and Form Units\*** — Max 3 in. (76 mm) deep galv steel fluted floor units.

B. **Concrete** — Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.

**1A. Roof Assembly** — (Not Shown) - As an alternate to the floor assembly (Item 1), a fire rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P900 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly fire rating of the roof assembly shall be equal to or greater than the hourly fire rating of the wall assembly. The roof assembly shall include the following construction features:

A. **Steel Roof Deck** — Max 3 in. (76 mm) deep galv steel fluted roof deck.

B. **Roof Insulation** — Min 2-1/4 in. (57 mm) thick poured insulating concrete, as measured from the top plane of the steel roof deck.

**2. Steel Straps** — Min 2 in. (51 mm) wide 16 MSG (0.059 in. or 1.5 mm thick) galv steel straps cut to a length to span the flute and to overlap min 1-1/2 in. (38 mm) on the adjacent valleys of fluted floor units. Straps spaced max 24 in. (610 mm) OC and fastened to floor assembly with 1/4 in. (6 mm) diam by 1-1/2 in. (38 mm) long steel concrete anchors.

**3. Forming Material\*** — Mineral wool batt insulation, nom 4 pcf (64 kg/m<sup>3</sup>), cut to the shape of the fluted floor units, friction fit to completely fill the flutes above the steel straps. Adjacent lengths of batts to be tightly butted with butted seams spaced min 24 in. (610 mm) apart along the length of the plugs.

**INDUSTRIAL INSULATION GROUP L L C** — MinWool-1200 Safing

**JOHNS MANVILLE** — Safing

**ROCK WOOL MANUFACTURING CO** — Delta Board

**ROCKWOOL MALAYSIA SDN BHD** — SAFE

**ROCKWOOL** — SAFE

**THERMAFIBER INC** — Type SAF

**A. Forming Material\*** — As an option to Item 3, preformed mineral wool plugs, formed to the shape of the fluted floor units, friction fit to completely fill the flutes above the steel straps. Adjacent lengths of batts to be tightly butted with butted seams spaced min 24 in. (610 mm) apart along the length of the plugs.

**THERMAFIBER INC** — TopStop mineral wool deck plugs Type SAF batts

**4. Shaft Wall Assembly** — The 1 or 2 hr fire rated shaft wall assembly shall be constructed of the materials and in the manner described in the individual U400 or V400-Series Wall and Partition Design in the UL Fire Resistance Directory. The wall shall be installed parallel with the direction of the steel deck, directly beneath steel straps (Item 2), and shall include the following construction features:

**A. Floor, Wall and Ceiling Runners** — "J"-shaped runner, min 2-1/2 in. (64 mm) wide with unequal legs of 1 in. (25 mm) and 2 in. (51 mm) for max 3/4 in. joints and min 2-1/2 in. (64 mm) wide with unequal legs of 2 in. (44 mm) and 2-1/2 in. (64 mm), fabricated from min 24 MSG galv steel. Runners positioned with short leg toward finished side of wall. Runners attached to walls and floor with steel fasteners spaced max 24 in. (610 mm) OC. Ceiling runner attached to each steel strap (Item 2) with two steel screws. As an alternate to the "J"-shaped floor runner, a min 2-1/2 in. (64 mm) wide by 1 or 1-1/4 in. (25 or 32 mm) deep channel formed from min 24 MSG galv steel may be used for the floor runner.

**A1. Light Gauge Framing\* - Slotted Ceiling Track** — (Not Shown) - As an alternate to the ceiling runner in Item 2A, slotted ceiling track shall consist of galv steel channels with slotted flanges. Slotted ceiling track sized to accommodate steel "C-H" studs (Item 4B). Attached to each steel strap (Item 2) with two steel screws

**BRADY CONSTRUCTION INNOVATIONS INC, DBA SLIPTRACK SYSTEMS** — SLP-TRK

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — CST

**CLARKDIETRICH BUILDING SYSTEMS** — Type SLT, SLT-H

**RAM SALES L L C** — RAM Slotted Track

**SCAFCO STEEL STUD MANUFACTURING CO**

**STEELER INC** — Steeler Slotted Ceiling Runner

**TELLING INDUSTRIES L L C** — True-Action Deflection Track

**THE STEEL NETWORK INC** — VertiTrack VT, series,250VT, 362VT, 400VT, 600VT and 800VT

**MARINO/WARE, DIV OF WARE INDUSTRIES INC** — Type SLT slotted track

**B. Steel Studs** — "C-H"-shaped steel studs to be min 2-1/2 in. (64 mm) wide and formed of min 24 MSG galv steel. Studs cut 1/2 to 3/4 in. (13 to 19 mm) less in length than assembly height with bottom nesting in and resting on floor runner and with top nesting in ceiling runner for max 3/4 in. joints. Studs cut 1-1/2 to 1-3/4 in. (38 to 44 mm) less in length than assembly height with bottom nesting in and resting on floor runner and with top nesting in ceiling runner for max 1-1/2 in. joints. Studs spaced 24 in. (610 mm) OC. After installation of gypsum board liner panels (Item 4C), studs secured to flange of floor runner on finished side of wall only with No. 6 by 1/2 in. (13 mm) long self-drilling,

self-tapping steel screws. Studs secured to flange of slotted ceiling track on finished side of wall only with No. 8 by 1/2 in. (13 mm) long self-drilling, self-tapping wafer head steel screws at slot midheight.

**C. Gypsum Board\*** — 1 in. (25 mm) thick by 24 in. (610 mm) wide gypsum board liner panels as specified in the individual U400 or V400-Series Wall and Partition Design. Panels cut 1 in. (25 mm) less in length than floor to ceiling height, for max 3/4 in. joints. Gypsum cut 1-1/2 to 1-3/4 in. (38 to 44 mm) less in length than floor to ceiling height for max 1-1/2 in. joints. Vertical edges inserted in "H"-shaped section of "C-H" studs. Free edge of end panels attached to long leg of "J" runner (Item 4AA) with 1-5/8 in. (41 mm) long Type S steel screws spaced max 12 in. (305 mm) OC.

**D. Gypsum Board\*** — Gypsum board sheets, 1/2 or 5/8 in. (13 or 16 mm) thick, applied vertically or horizontally in one or two layers on finished side of wall as specified in the individual U400 or V400-Series Wall and Partition Design. A max 1 in. (25 mm) gap shall be maintained between the top of the gypsum board and the bottom surface of the concrete floor, for max 3/4 in. joints. A max 1-1/2 in. (38 mm) gap shall be maintained between the top of the gypsum board and the bottom surface of the concrete floor for max 1-1/2 in. joints. The screws attaching the gypsum board layers to the C-H studs shall be located 1 in. (25 mm) below the bottom of the ceiling runner. No gypsum board attachment screws are to penetrate the ceiling runner.

**5. Joint System** — Max separation between bottom of floor and top of gypsum board (Item 4D) is 3/4 in. (19 mm). The joint system is designed to accommodate a max 25, 50 or 100 percent compression or extension from its installed width. **When Item 5A1 is used in lieu of the strips of mineral wool described in Item 5A, the movement capabilities are 100% compression or extension. When Item 5C & 5D are used in lieu of the strips of mineral wool described in Item 5A, the movement capabilities are 25% compression or extension.** The joint system consists of a forming material and a fill material between the top of the gypsum board and the bottom of the floor, as follows:

**A. Forming Material\*** — Min 4 pcf (64 kg/m<sup>3</sup>) density mineral wool batt insulation cut into strips to fill the gap between the top of gypsum liner panel and bottom of the ceiling runner or track (Item 4 or 4A). The width of the strips shall be equal to the total thickness of the gypsum board liner panel. The strips of mineral wool are compressed 50 percent. Strips of mineral wool batt insulation cut to width of gypsum board layers (Item 4D) and compressed 50 percent in thickness and firmly packed into the gap between the top of the gypsum board and the bottom of the mineral wool batt sections (Item 3) or steel floor or roof units (Item 1A or 1AA). Strips installed above gypsum board layers on finished side of wall assembly flush with the wall surface.

**INDUSTRIAL INSULATION GROUP L L C** — MinWool-1200 Safing

**JOHNS MANVILLE** — Safing

**ROCK WOOL MANUFACTURING CO** — Delta Board

**ROCKWOOL MALAYSIA SDN BHD** — SAFE

**ROCKWOOL** — SAFE

**THERMAFIBER INC** — Type SAF

**A1. Forming Material\*** — (not shown) Nom 3/16 in. (4.8 mm) thick by 4 in. (102 mm) high joint forming material profile installed on both sides of the wall assembly. Profile installed on the shaft side of the wall by first marking a line across the top of the wall 3 in. (76 mm) below the bottom plane of the bottom of the "J" or ceiling runner on the interior surface of the gypsum liner. Joint profile material on shaft side positioned with its top edge against both the underside of the ceiling runner with its bottom edge on the line scribed on the shaft liner. Profile installed on the finished side of the wall by first marking a line across the top of the wall 3 in. (76 mm) below the bottom plane of the mineral wool batt sections (Item 3) or steel floor or roof units (Item 1A or 1AA). Joint profile material on finished side positioned with its top edge against both the underside of the mineral wool (Item 3) or steel floor or roof units (Item 1A) with its bottom edge on the line scribed on the finished side of the wall assembly. Bottom of the joint profile attached to gypsum board with nom 1/2 in. (13 mm) long steel staples spaced not greater than 8 in. (203 mm) OC. Adjoining lengths of profile to overlap approx 3/4 in. (19 mm) at shiplapped ends.

**SPECIFIED TECHNOLOGIES INC** — SpecSeal Speed Flex Joint Profile

**B. Fill, Void or Cavity Material\* - Sealant** — Min 1/8 in. (3.2 mm) wet thickness (min 1/16 in. or 1.6 mm dry thickness) applied to cover forming material (Item 5A or 5A1) with a min 1/2 in. (13 mm) overlap onto the gypsum board, steel strapping and steel deck on both sides of wall. Spray applied to cover mineral wool batt insulation on finished side of wall.

**SPECIFIED TECHNOLOGIES INC** — SpecSeal AS200 Elastomeric Spray

**C. Bond Breaker Tape (Optional, Not Shown)** — When Item 5D is used, polyethylene tape supplied in rolls. Tape applied to flanges of slotted ceiling track (Item 2D) to prevent bonding of the sealant at points other than the top and bottom of the linear gap.

**D. Fill, Void or Cavity Material\* - Sealant (Optional, Not Shown)** — As an alternate to Item 5A or 5A1, min 1 in. (25 mm) depth of sealant to be installed to fill linear gap between top of gypsum board liner panel (Item 4C) and top inside surface of slotted ceiling runner or track (Item 4A or 4A1) prior to installation of gypsum board sheets on finished side of wall.

**SPECIFIED TECHNOLOGIES INC** — SpecSeal ES Elastomeric Sealant. **When sealant is used, the movement capability of the joint is limited to 25 percent in compression or extension.**

**\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

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